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EFFECT OF NARROW BAND ULTRAVIOLET B ON THE SERUM LEVEL OF 25-HYDROXYVITAMIN D IN VITILIGO PATIENTS

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ABSTRACT
to evaluate the serum level of 25-hydroxy vitamin D in patients with vitiligo before and after NB-UVB therapy and correlation of this with re-pigmentation in vitiligo patients.

I- Introduction

Vitiligo is a common acquired depigmentation of the skin and mucous membrane, caused by melanocyte loss of function. It is characterized classically with well-confined hypopigmented macules and/or patches. This can affect any part of the body and leads to great impact on the patients' quality of life. [1]

Many theories tried to explain the pathogenesis of vitiligo; including melanocyte destruction (due to autoimmune disorders, cytotoxic mechanisms, and an intrinsic melanocyte defects), oxidant-antioxidant imbalance and neural mechanisms. However, the exact etiology is still unclear[2]. In the last years, there is a growing interest regarding the role of vitamin D3 in the pathogenesis of vitiligo and also the potential role of vitamin D3 in the treatment of vitiligo[3]

Available data proposes that vitamin D3 is a potent immunosuppressive; and hypovitaminosis D may be associated with many autoimmune disorders including vitiligo. However, we do not know the exact cause of low vitamin D3 in patients with autoimmune diseases[4]

Vitamin D controls the activation, proliferation, and migration of melanocytes by increasing melanogenesis and the tyrosinase content of cultured human melanocytes through its antiapoptotic effect and also decreases the autoimmune damage of melanocytes by modulating T-cell activation[5]

Narrow band ultraviolet B has become an important therapy for vitiligo since first introduced by Westerhof and Nieuweboer-Krobotova in 1997. The mechanism of action of NB-UVB in vitiligo is by suppression of the immune system and stimulation of melanocyte proliferation in the skin and the outer root sheath of hair follicles[6]

Exposure of skin to sunlight (mainly UVB) contributes to over 90% of the serum concentration of 25-Hydroxy vitamin D in the human body[7]

the level of serum vitamin D3 level was significantly higher among vitiligo patients at 12 weeks after NB-UVB therapy (20.87±15.08) compared to the pre-treatment mean of (14.69 ±14.05); p value < 0.001.[8].

Regarding the vitamin D difference post-treatment in our study, we found that the majority of cases (90%) showed improved vitamin D level after treatment. Regarding VASI score, we found that VASI score improved from a mean of around 9 before treatment to as less as 7.125 after treatment. This improvement was highly significant statistically (p value = <0.001). [9]

Our results are in agreement and support of many previous studies that found an increase in the levels of vitamin D3 by treatment with NB-UVB [10, 11]

The VASI scores improved significantly with the rise in the cumulative dose of NB-UVB.[12-14]

II- Conclusion

Cumulative doses of NB-UVB treatment may correct the low vitamin D3 levels among patients with vitiligo, subsequent potential role of NB-UVB-induced repigmentation.

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